



The Honorable Bob Perciasepe  
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U.S. Environmental Protection Agency  
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Dennis J. McLerran, Regional Administrator  
U.S. Environmental Protection Agency, Region 10  
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Re: Second External Review Draft: "An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska" (April 2013)

Dear Messrs. Perciasepe and McLerran:

I am writing to you on behalf of the Pebble Limited Partnership ("PLP") about the Second External Review Draft: "An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska" (April 2013) ("Assessment"). I have several concerns and questions about this project, including: the Assessment's objectives; how the second peer review process is being conducted; and EPA's use of biased reports (that also have little scientific value) written by avowed opponents of the Pebble Project. I am extremely disappointed by EPA's inclusion of these biased reports in the Assessment, which casts a shadow on EPA's purposes for producing it.

There is a lot to digest in this 1,400-page (with appendices) report, so we are requesting a 90-day extension of the 30-day comment period.

We have one additional request: that EPA provide (or allow us to provide) our comments on this second draft to the peer reviewers so they can consider our observations before they provide their own follow-up reviews of the Assessment.

My concerns and questions are explained below. I look forward to your answers.

### **Assessment Objectives**

EPA has said that the value of the Bristol Bay fishery prompted the Assessment. The title of the Assessment, however, does not mention the Bristol Bay watershed. Is determining watershed-scale effects no longer a goal of the Assessment?

## **Peer Review of the Revised Draft Assessment**

I have three concerns about the second peer review of the draft Assessment: lack of transparency, lack of peer reviewer access to public comments, and insufficiency of time to comment.

### Transparency

During the first round of peer review, EPA provided (among other procedures) the opportunity for public comment on the charge to the peer reviewers; it also forbade *ex parte* communications by EPA with the peer reviewers. In contrast, we don't know the ground rules of this second phase of the peer review. What is their charge? What communications (if any) have the peer reviewers had with EPA? Have they communicated with others who have taken an interest in the Pebble Project? When did they receive the second draft of the Assessment? What other information has EPA provided them? What is their comment deadline?

### Access to Public Comments

The peer reviewers should have access to comments from the public on the second draft, just as they did for the first draft. Will our comments be provided to the peer reviewers? Would EPA object if we provided our comments to the peer reviewers in time for them to consider our comments before they submit their own? What is the peer reviewers comment deadline, and how was it determined?

### Sufficient Time to Comment

The third concern is having sufficient time to comment. The first set of peer reviewers expressed dissatisfaction with the short amount of time for them to review and comment on this complex document — a little less than three months before the public meeting. Their final report is dated more than a month after that. EPA is under no legal deadline to finalize the Assessment (or even to prepare it), so there is no need to deprive the peer reviewers of adequate time for a thorough review.

## **Peer Review of Reports By Mine Opponents**

I am troubled that EPA engaged peer reviewers to legitimize six biased reports written by mine opponents. In fact, the peer reviewers themselves identified the biased nature of these reports, and their comments reveal that these reports have little scientific value. What little value they have derives from compiling the results of work by others, although it was selected to support their own anti-Pebble agenda. These circumstances suggest that EPA chose to use them not because of their scientific value, but because they favor the conclusions that EPA wants to reach. Below are some of the peer reviewer comments about each of these reports.

1. *Comparison of the Pebble Mine with other Alaska Large hard Rock Mines* (Levit and Chambers 2012)

EPA's inclusion of this report in the Assessment, which should be a scientific document, is revealing. EPA selected four peer reviewers (David Brett, Andy Fourie, Robert Kleinmann, and Natalia Ruppert). Peer reviewer Robert Kleinmann wrote that this report "is clearly intended to convince the reader that the Pebble Mine should not be permitted to operate . . . ." *Final Peer Review Summary Report: External Review of Chambers and Higman 2011 (Long Term Risks of Tailing Dam Failure) and Levit and Chambers 2012 (Comparison of the Pebble Mine with other Alaska Large Hard Rock Mines)* at 20. He later noted that "[i]ts intended audience is clearly the general public rather than informed scientists and administrators." *Id.* at 21. Peer Reviewer Natalia Ruppert wrote that "it seems that the whole point of this report was to emphasize how much more threatening Pebble project's impact would be . . . . Therefore, the report lacks impartiality." She concluded "I remain suspicious as to soundness of the conclusions presented in this report . . . . I am suspicious of what the authors chose not to mention in order to maintain their perception of the Pebble mine threats." *Id.* at 16. Peer Reviewer David Brett wrote that the report "does tend to go into a relatively shallow commentary of potential impacts from the particular mine." *Id.* at 17. He later concluded that "some of the language used is a bit alarmist and not based on presented data." *Id.* at 19.

2. *U.S. Copper Porphyry Mines Report: the Track Record of Water Quality Impacts Resulting from Pipeline Spills, Tailings Failures, and Water Collection and Treatment Failure* (Earthworks 2012)

Earthworks is a Canadian organization opposed to mining. In Kuipers 2006 (discussed immediately below) Earthworks is described as "a non-profit organization dedicated to protecting communities and the environment from the destructive impact of mineral development in the U.S. and worldwide." Earthworks' point of view is evident in its report's introduction, which candidly explains that "The purpose of this report is to compile the record of pipeline, seepage control and tailing impoundment *failures* at operating copper porphyry mines in the U.S., and to document associated water quality impacts." Report at 4 (emphasis added).

EPA selected four peer reviewers (David Atkins, Robert Kleinmann, Dina Lopez, and Christian Wolkersdorfer). One of the peer reviewers, Robert Kleinmann, wrote that "I find the report, by its nature, to be very biased. In reality, a similar report emphasizing problems and mistakes could probably be written for most human activities. For example, a similar report written about farming . . . ." *Final Peer Review Summary Report: External Review of Chambers and Higman 2011 (Long Term Risks of Tailing Dam Failure) and Levit and Chambers 2012 (Comparison of the Pebble Mine with other Alaska Large Hard Rock Mines)*, at 20. David Atkins observed that "Most of the mines considered are quite old facilities with operations often initiating in the 1880s and with large-scale, open-pit operation initiating in the post WWII era . . . ." *Id.* at 22. He noted that "The conclusion that we can expect a similar or worse track record for a new mine is, however, not supported by the information presented." *Id.* at 24. Christian Wolkersdorfer wrote that "[b]ecause [the authors] did not provide reasons for [spills or impoundment or treatment failures] the 'innocent' reader might draw the conclusion that copper porphyry mine operations cannot be operated on an environmentally sound basis." *Id.* at 28. He

later concluded that “this is not the case as many incidents are only of minor importance and modern day mining has more stringent requirements than the older mines investigated.” *Id.* at 29. Mr. Kleinmann concluded that “Most of the report is based on guilt by association.” *Id.* at 29.

### 3. *Comparison of Predicted and Actual Water Quality at Hardrock Mines* (Kuipers *et al* 2006)

One of the co-authors of this report is Ann Maest, whose work in support of a lawsuit against Chevron was publicly disavowed by her employer (Stratus Consulting). The report announces that “This publication was made possible by EARTHWORKS in Washington, D.C., U.S.A. . . .” It also credits project advice, input, and “internal peer review” from Dave Chambers.

The Assessment states that mine selection “is not apparently biased.” Assessment at 8-53. In fact, it is *overtly* biased. The authors selected 25 of 71 hard rock mines that resulted in NEPA water quality predictions. The second selection criteria priority was mines “indicating water quality impacts.” Report at 87. Thus the criterion *excluded* mines *without* water quality impacts.

EPA selected four peer reviewers for this study (David Atkins, Robert Kleinmann, Dina Lopez, and Christian Wolkersdorfer). Mr. Wolkersdorfer pointed out that the report’s “summary table only describes old mines – where environmental requirements might have been less stringent than today.” *Final Peer Review Summary Report: External Peer Review of Kuipers et al. 2006 (Comparison of Predicted and Actual Water Quality at Hardrock Mines) and Earthworks 2012 (U.S. Copper Porphyry Mines Report)* at 6. He added that “the conclusions drawn by Kuipers et al. are correct for the 25 mines they investigated in 2006, but they cannot be used to predict the outcome of future predicted water qualities during or after mining.” *Id.* at 7. Ms. Lopez concluded that “[b]ecause of the lack of statistical proof that the core findings of their presentation (e.g. 25 case studies) are representative for all past and future mines, the value of this report for the EPA assessment is questionable.” *Id.* at 18. Mr. Wolkersdorfer made the same point. *Id.* at 4. Mr. Kleinmann pointed out that the study failed to consider that the mines “had operated over very different time periods, during which the state-of-the-art was rapidly changing.” *Id.* at 15.

### 4. *Long Term risks of Tailing Dam Failure* (Chambers and Higman 2011)

This report is an overview of tailings dam risks. EPA selected four peer reviewers (David Brett, Andy Fourie, Robert Kleinmann, and Natalia Ruppert). David Brett observed that “some statistical interpretation is misleading.” *Final Peer Review Summary Report: External Review of Chambers and Higman 2011 (Long Term Risks of Tailing Dam Failure)* and Levit and Chambers 2012 (*Comparison of the Pebble Mine with other Alaska Large Hard Rock Mines*) at 3. He went on to explain that “Recent failures in China that I have personal knowledge of are due to inappropriate flood design parameters and lack of emergency spillway provisions. These cases affect the statistics and do not allow modern design practices and operations in well regulated environments to be fully appreciated.” *Id.* at 4. Mr. Brett noted that the number of tailings dams far exceeds the 3,500 number quoted from another report – there are over 13,000

tailings dams in China alone—“many from small operations. Nevertheless failure of these is likely to be included in the statistics.” *Id.* He concluded that the authors had “not fully understood the data” from a key source. *Id.* at 9. Mr. Fourie noted that “The information presented is thus not derived from the authors’ own research or investigations” but from independent sources. *Id.* at 5.

5. *Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages Bristol Bay, Alaska, 2008-2010* (Woody and O’Neal 2010)

This report was done for The Nature Conservancy. Its stated purpose was “to determine whether salmon habitat could be affected by potential mining activity” at the Pebble Prospect. (“Preface”) EPA selected four peer reviewers for this report (Michael Donaldson, James Helfield, Dennis Scarnecchia, and William Wilson). Mr. Wilson observed that “I did not see that purpose reflected in the body of the report. There was no discussion of impact assessment methodology or documentation of an environmental assessment, which would be needed to attain the stated purpose.” *Final peer Review Summary Report: External Peer review of Woody and O’Neal 2010 (Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages Bristol Bay, Alaska, 2008-2010) and Woody and Higman 2011 (Groundwater as Essential Salmon Habitat in Nushagak and Kvichak River Headwaters: Issues Relative to Mining)* at 4. He criticized the “disjointed and advocacy-laced Preface, which unfortunately sets the scene for a report that bears little resemblance to the Preface.” *Id.* at 10.

Mr. Scarnecchia observed that “There is no discussion section at all where results are qualified and discussed, and the conclusion section has an array of new methods, results, and discussion, with no specific conclusions identified.” *Id.* at 5. Mr. Wilson similarly observed that “The conclusions of the report are meagerly supported by the evidence provided.” *Id.* Mr. Scarnecchia observed other aspects of the methodology that were never explained, including the basis for selecting streams for sampling, how fish life stages were identified, or even why most of the habitat information was collected. *Id.* at 8-9. Mr. Wilson’s observation exposes the bias of the study authors: “A statement on page 23 requires considerable explanation and referencing: ‘As illustrated by this . . . stud[y], headwaters comprise a significant proportion of essential . . . habitat for salmon . . .’ This report provides no justification or supporting data or analyses for this statement.”

6. *Groundwater as Essential Salmon Habitat in Nushagak and Kvichak River Headwaters: Issues Relative to Mining* (Woody and Higman 2011).

The purpose of this report is to show that ground water is an essential habitat for salmon in the headwaters of the Nushagak and Kvichak River watersheds. EPA selected four peer reviewers (Michael Donaldson, James Helfield, Dennis Scarnecchia, and William Wilson). Mr. Scarnecchia wrote that “This paper is best characterized as an overview paper . . . presenting a range of plausible concerns” about changes in ground water quality associated with potential mining might affect salmon habitat. *Final peer Review Summary Report: External Peer review of Woody and O’Neal 2010 (Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages Bristol Bay, Alaska, 2008-2010) and Woody and Higman 2011 (Groundwater as Essential Salmon Habitat in Nushagak and Kvichak River Headwaters: Issues Relative to*

*Mining*) at 15. Mr. Wilson, after noting that the report provided a good literature review on the ground water/surface water connection and sound field observations, wrote that “The conclusions in this report, however, are not supported by the information provided. This report strays from the purpose as outlined in the title to a series of hypothetical and often random statements about mining impacts, concluding that a specific development, the Pebble Prospect, has the potential to ‘significantly impact’ fish without providing in this report data or information on the mine development plan, locations of specific mine facilities, mitigation measures to be employed, and many other unknowns.” *Id.* at 16. Mr. Sarneckchia similarly commented that the third objective of the report was to “identify *potential risks*” (emphasis in original) and it used words “such as ‘potential,’ ‘can,’ and ‘may,’ recognizing that more detailed studies are clearly needed.” *Id.* at 16. Mr. Wilson referred to the conclusions as “a series of hypothetical statements . . . .” *Id.* at 18.

Thus the report was more effective at expressing the fears of the authors than adding valuable new scientific knowledge (the authors cite (at 11) to Kuipers (2006) discussed above, concerning risks of contamination from mines). Mr. Donaldson commented that the premise for the one-day field study – that open water seen in March 2011 is from ground water upwelling – “represents a weakness” because open water could result from other factors (including temperature changes) other than ground water upwelling. *Id.* at 19. Mr. Wilson concluded that “Only a single field trip is described, and that effort was a single day in the field completing aerial surveys of over 175 miles (or more?) The study has limited application to impact assessment since it does not document actual fish presence in areas identified as open water and potential fish habitat. . . . Overall, this study is interesting and relevant, but limited in scope and too general in nature to contribute to quantitative assessment of development impacts.” *Id.* at 24.

EPA’s decision to arrange for peer review of slanted studies appears to be an attempt to bolster one side of an argument. The Agency’s time and money would be better spent evaluating the real science that has been carefully reported in the Pebble Project’s Environmental Baseline Document.

### **Bias of the Authors of the Newly Peer Reviewed (and Other) Studies**

It is hardly surprising that the peer reviewers found bias in the foregoing studies. The authors are dedicated opponents of the Pebble Project.

David Chambers is the president of the Center for Science in Public Participation (“CSP2”), which opposes mining in general and the Pebble project specifically. Its website is at <http://www.csp2.org/>. The website’s project page discusses its activities opposing Pebble and its involvement with others whose articles were selected by EPA for peer review. The website explains in relevant part:

Since 2007 CSP2 has been providing technical support to a loose coalition of groups opposed to the proposed [Pebble] mine. Dave Chambers, (general mining), Kendra Zamzow, (geochemistry), and Stu Levit, (reclamation and regulatory), have provided support from CSP2. CSP2 also utilized consultants Carol Ann Woody, Ph.D., and Sarah O’Neal, M.S., from Fisheries Research and Consulting to provide support on fisheries

biology, and Ann Maest, Ph.D., and Cam Wobus, Ph.D., from Stratus Consulting to provide technical support on geochemistry and hydrology. Bretwood Higman, Ph.D., from Ground Truth Trekking provided fault and seismic research.

The research efforts of this technical team have led to a significant number of publications and professional presentations. Dave Chambers, and CSP2 consultant Bretwood Higman, developed a paper on the “Long Term Risks of Tailings Dam Failure” which has been presented at several professional meetings. Kendra Zamzow collected and analyzed water quality data from several sites in the area of the proposed mine “Investigations of Surface Water Quality in the Nushagak, Kvichak, and Chulitna Watersheds, Southwest Alaska, 2009-2010.” Stratus Consulting has developed a state-of-the-art computer hydrologic model that is being used to develop predictions of groundwater and surface water flows, and the geochemistry of those waters, which would result from the development of the mine. Fisheries Research and Consulting has been involved in a multi-year survey to collect data on the presence of salmonids in the area, “Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages, Bristol Bay, Alaska, 2008 – 2010.”

EPA released its Draft “Bristol Bay Watershed Assessment” in May, 2012. This is a significant scientific effort to evaluate the potential impacts of the Pebble mine on the Bristol Bay ecosystem. Dave Chambers and Kendra Zamzow provided technical critiques of the Draft to EPA with recommendations for improvement. CSP2 is also working with the Bristol Bay Native Corporation in its effort to convince EPA to invoke its power under section 404(c) of the Clean Water Act to veto the Pebble Project because it would have an “unacceptable adverse effect” on fisheries resources in the Bristol Bay region.

(underlining added) Of these authors, Mr. Higman is the most versatile: he co-authored papers on both tailings dam failures (with Mr. Chambers) and ground water as essential salmon habitat (with Ms. Woody). The Assessment also uses works by Ann Maest, Cam Wobus, and Kendra Zamzow, all of whom helped Mr. Chambers’ firm provide technical support “to a loose coalition of groups opposed to the proposed mine.”

It is troubling that EPA chose to peer review only papers submitted by opponents of Pebble. There were a number of other studies submitted by us and others who support our right to go through the permitting process. EPA did not peer review any of these studies. EPA’s bias is apparent to us and, we believe, to anyone who reviews your process with an open mind.

In addition, I was disturbed to learn from this same website that Ms. Zamzow began working for EPA’s Office of Research and Development (“ORD”) in Washington, D.C. in August 2012 and will continue to work for EPA until September 1, 2013. ORD is one of the authors of the Assessment. While at EPA, has this Pebble Project opponent worked on the Assessment?

The Assessment’s appendix on Native cultures (Appendix A) was authored by Professor Alan Boraas, who has been an open opponent of the Pebble Project since at least April 2007, when he was described as “. . . a frequent op-ed contributor to the Anchorage Daily News. One

of his regular targets for criticism is the Pebble copper project in southwest Alaska.”<sup>1</sup> On at least one occasion, he has presented his work at an event sponsored by organizations opposing Pebble who used the event to gather increased opposition to the project.

We request that the peer reviewed reports we have mentioned above and Professor Borass’ study be removed from the final document.

### **Request for Extension of the Comment Period**

PLP requests a 90-day extension of the comment period on this second external review draft. The 30-day comment period on this highly technical, 1,360-page report is insufficient to enable informed participation by interested stakeholders and members of the public. The unduly short deadline is completely unnecessary. EPA has no mandatory duty to prepare the assessment, and has no obligation to complete the assessment within any specified time period.

The report and its appendices are so long that it is difficult to even read the material in the time allotted for public comment, let alone critically analyze the information and provide EPA with informed comments. The initial peer review panel sharply criticized EPA’s methodology and conclusions in the first draft assessment, which heightens the need for critical evaluation of the second draft. The only conceivable explanation for severely limiting the public review period for the current draft is to limit the public’s ability to analyze the studies, reports, and other information EPA used in the Assessment. That result benefits no one.

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Dennis, thank you for your consideration of my concerns about the Assessment and the process used to develop it. I look forward to your response.

Sincerely,

  
John Shively  
Chief Executive Officer

Cc: Mr. Richard Parkin

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<sup>1</sup> MINING NEWS: Mining and the law: Rio Tinto and the Pebble project, by J.P. Tangen (Vol. 12, No. 17, week of April 29, 2007).